

THE ECONOMIC SITUATION

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March 2007

- ❑ GDP growth is paler than we thought...for now.
- ❑ Taking froth off China's market.
- ❑ But the money supply still predicts better things ahead.
- ❑ The manufacturing economy soars, and so does the knowledge economy.
- ❑ Building knowledge clusters.
- ❑ Norman Borlaug: An American hero.

Even GDP growth gets the blues.

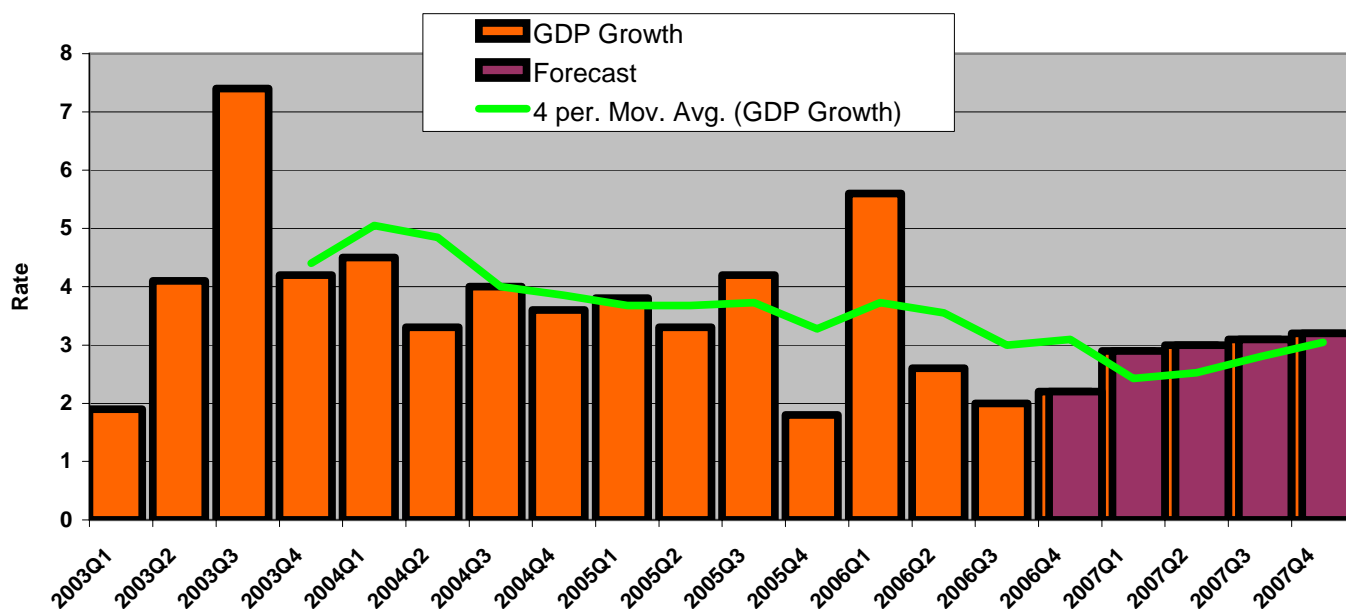
In late February, the Department of Commerce made a sharp adjustment to the advanced GDP estimate that had been released earlier. The nation's real GDP growth for 4Q2006 was cut from 3.5% to 2.2%, almost a whopping 40% reduction. Then, the same agency announced a sharp decline in new home sales and a drop in orders for durable goods. Unfortunately, the Commerce sackcloth-and-ashes announcement came immediately on the heels of Mr. Greenspan's suggestion that "it is possible we can get a recession in the latter months of 2007," all of this just before the stock market meltdown.

Trying to put a good face on the revised data, one commentator suggested the GDP adjustment was really good, not bad, news. The revisions indicate that there is not a large build up of inventories taking place, but rather that the U.S. economy is trimming down and gearing up for renewed expansion. In other words, count yourself lucky to be among the living.

The adjustment, other unhappy news, and Mr. Greenspan's comment may have given us a pause that refreshes, but I liked the way my portfolio was looking the day before both news items hit the press.

The GDP growth chart here contains the new data.

GDP Growth and Projections



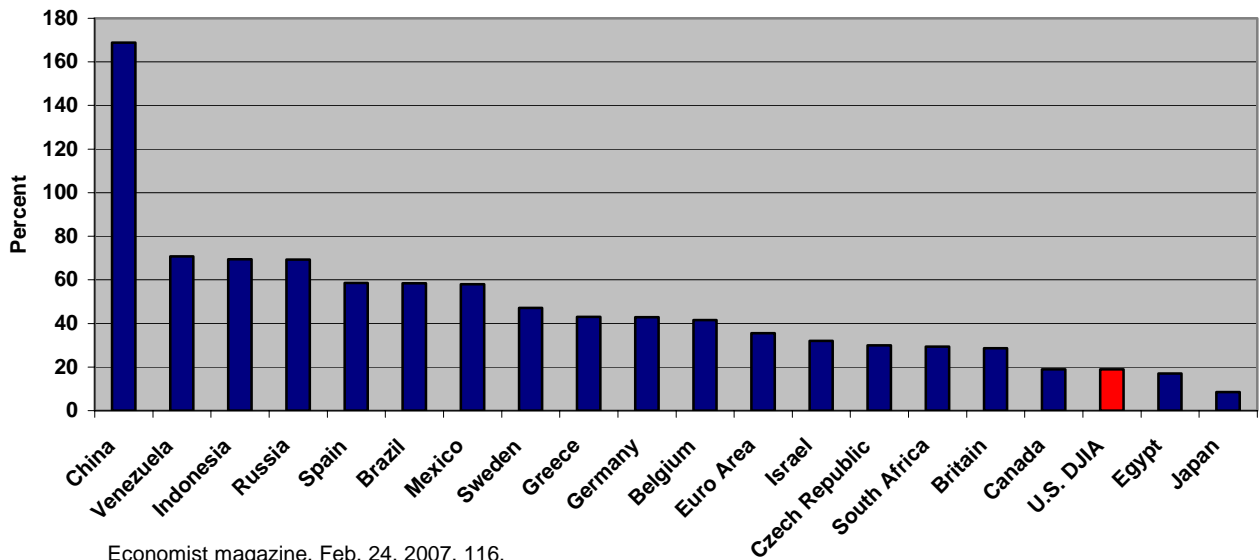
And then, there were new controls on the Chinese stock market

In addition to weak economic data and Mr. Greenspan's comment, there was also another action that first affected China's and then the world's equity markets in late February. Just as Mr. Greenspan's message was beamed to Shanghai, the Chinese government was considering new rules for investors in an attempt to take some of the froth off their market. With so much purchasing power arriving from the United States, banks have expanded credit to China-based firms that are participating in a giant leap forward. We are told that ordinary Chinese citizens had begun to see day trading as a no lose bet. The new rules or taxes would reduce access to credit for stock purchases and force investors to unwind some of their deals. A sell-off followed in a nervous market..

The next chart shows the relative gain in a sample of world equity markets from December 30, 2005, through February 21, 2007, all calculated by **The Economist** magazine in dollar terms.

China obviously had a rather frothy market, to say the least.

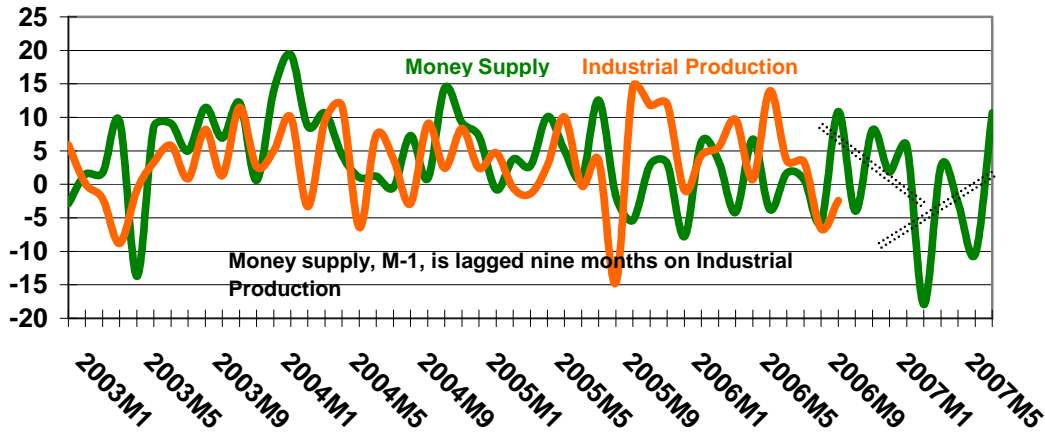
Growth in Stock Indexes December 30, 2005 to Feb. 21, 2007



Money supply still seems to be calling the tune for the U.S.

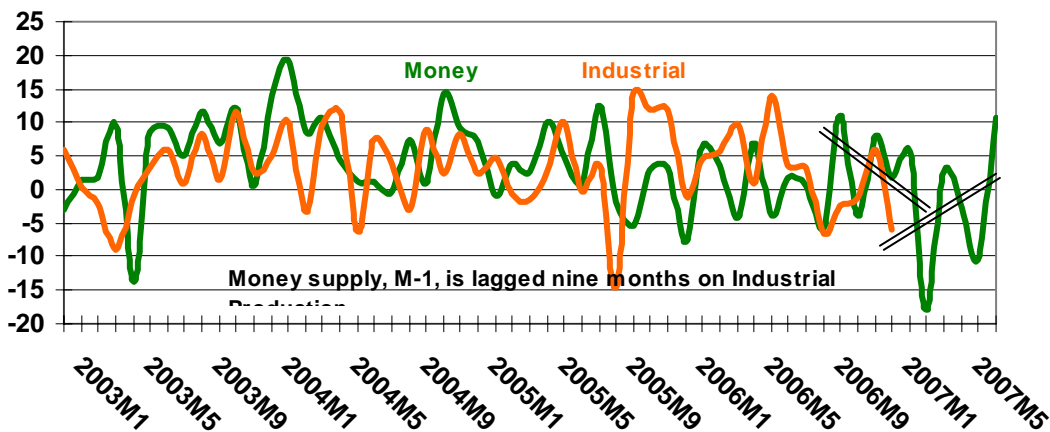
Major items of economic news and comments by credible authorities matter a lot, but regular readers will recall a chart in last quarter's report that showed how money supply growth enables one to predict the path of U.S. Industrial Production. The chart from last quarter's report was a bit of a celebration of Milton Friedman who made pioneering strides in work that focused on the importance of money in the economy. Last quarter's chart mapped growth in M1, currency plus demand deposits in the economy, into industrial production data. The chart, which is repeated here, contained a forecast for 2007. You will note that the forecast called for negative growth in this year's first half and a recovery in the last half of the year.

Money Supply and Industrial Production **2003 - 2006** **Projections to 2007**



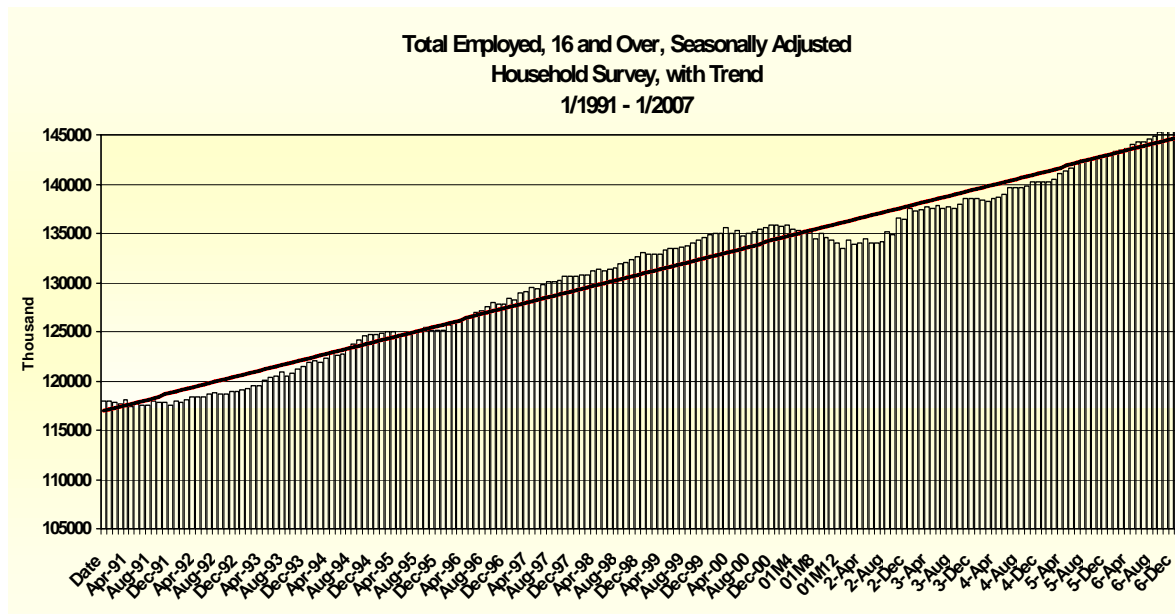
I have updated the chart with Industrial Production data for the last few months. The next chart tells us that the forecast is working fairly well. We should be about two months away from the turning point. Let us hope for happier comments from the Department of Commerce as well as from Mr. Greenspan.

Money Supply and Industrial Production **2003 - 2006** **Projections to 2007**



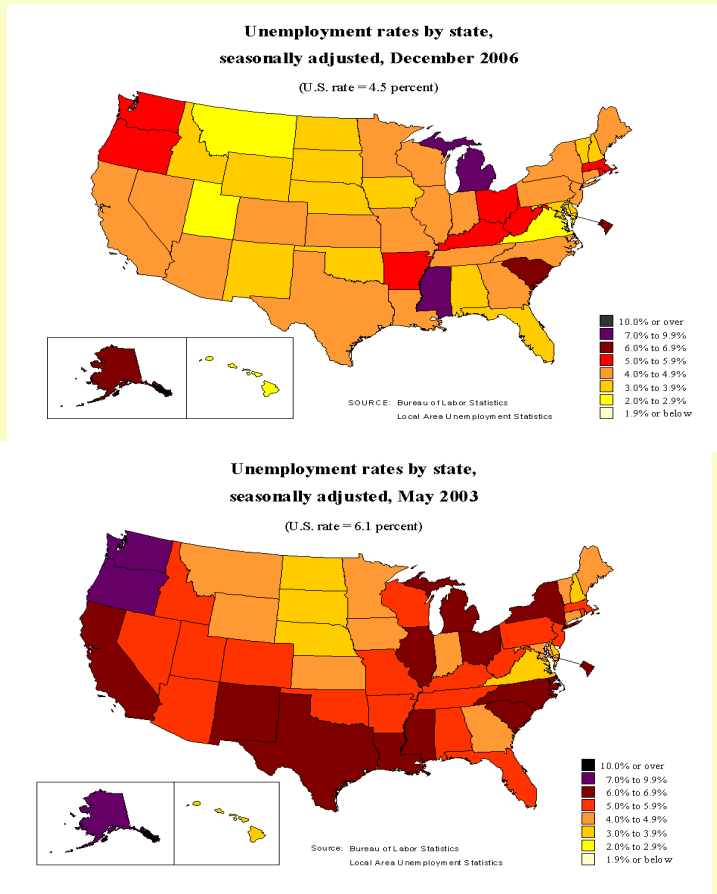
Employment grows and brightens the outlook for most state economies.

While industrial production, which measures manufacturing, electrical utility output, and mining, is sagging a bit, U.S. employment continues to expand somewhat above the long-term trend growth rate. The chart here shows a healthy level of total employment.



When this growth is translated to state unemployment rates, we find only D.C. and four states with relatively high unemployment rates. The states are Alaska, which, like D.C., is a special case when it comes to the unemployment rate, Michigan, Mississippi, and South Carolina. Mississippi still bears the burden of the Katrina disaster, while Michigan and South Carolina are bearing the brunt of restructuring economies. It is interesting that South Carolina's employment economy is more like Michigan's than its neighbor, North Carolina's.

The next two maps give a comparison of state unemployment in May 2003 with December 2006.



The burgeoning manufacturing and business services economy

While Michigan and South Carolina are in the process of evolving away from older base industries, and Mississippi is slowly recovering from Katrina's agony, the transforming U.S. economy continues to be a massive producer of manufactured goods. This is shown in the next chart, which is based on the Federal Reserve Board's Index for Manufacturing. Just one quick glance reveals that output has been increasing at an increasing rate. I have inserted an exponential trend line to make that assessment a bit easier.

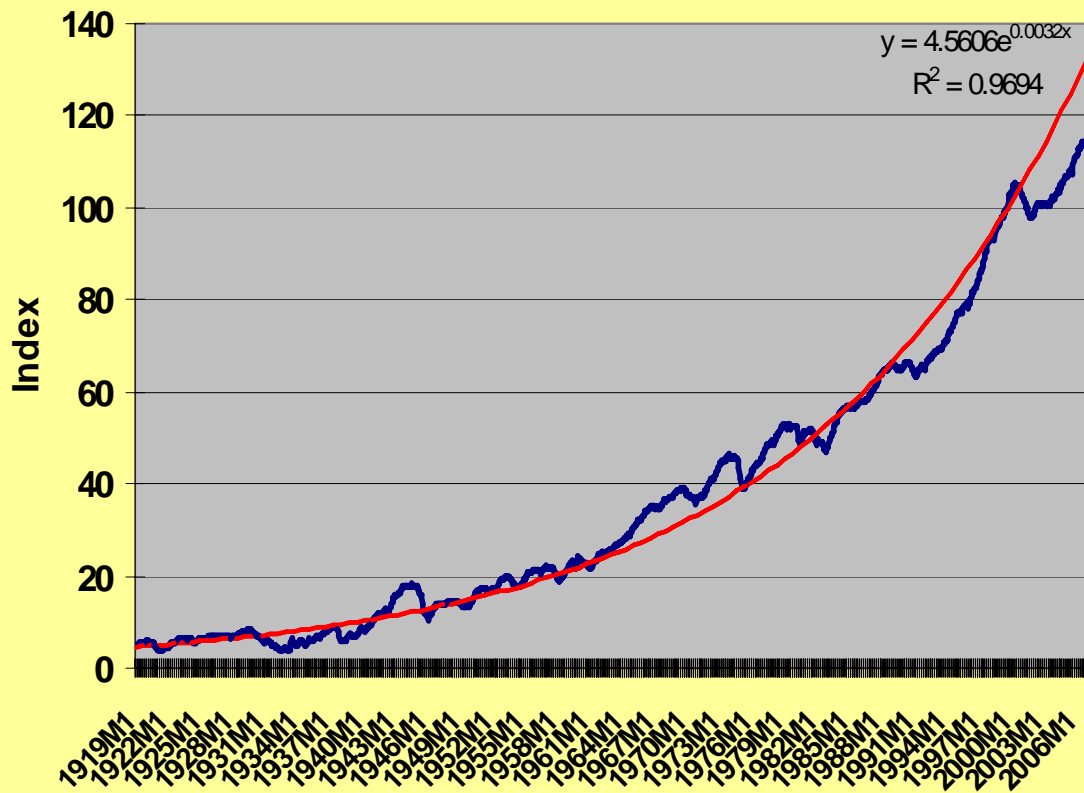
But we all know that manufacturing continues to require less and less labor. So where is all that employment growth coming from?

America's employment growth is occurring in services, and especially in Business and Professional Services, the sector that contains the Knowledge Economy.

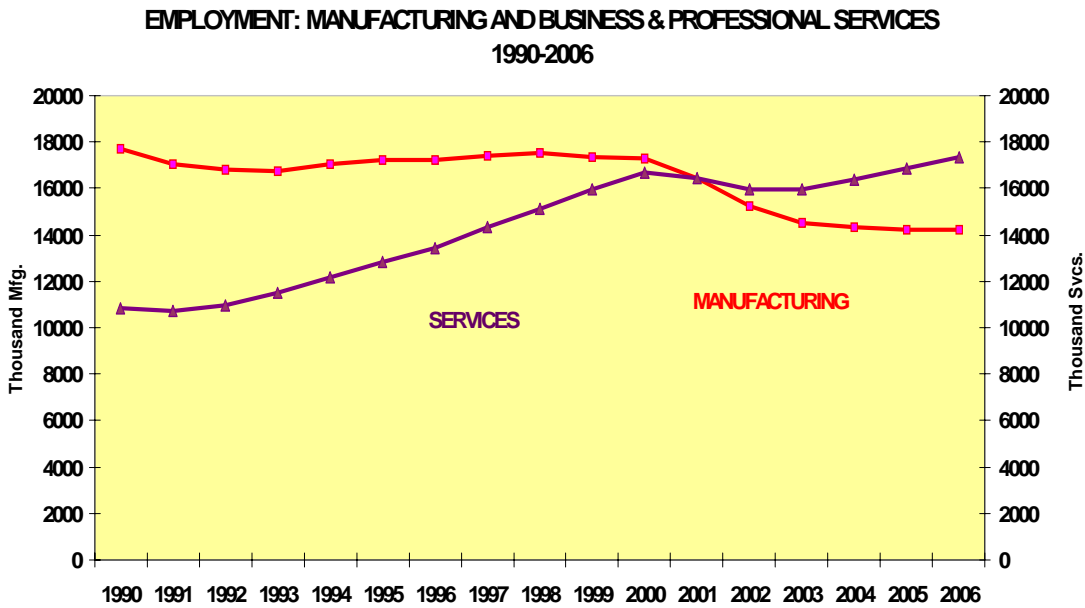
U.S. Manufacturing Output

1919-2006

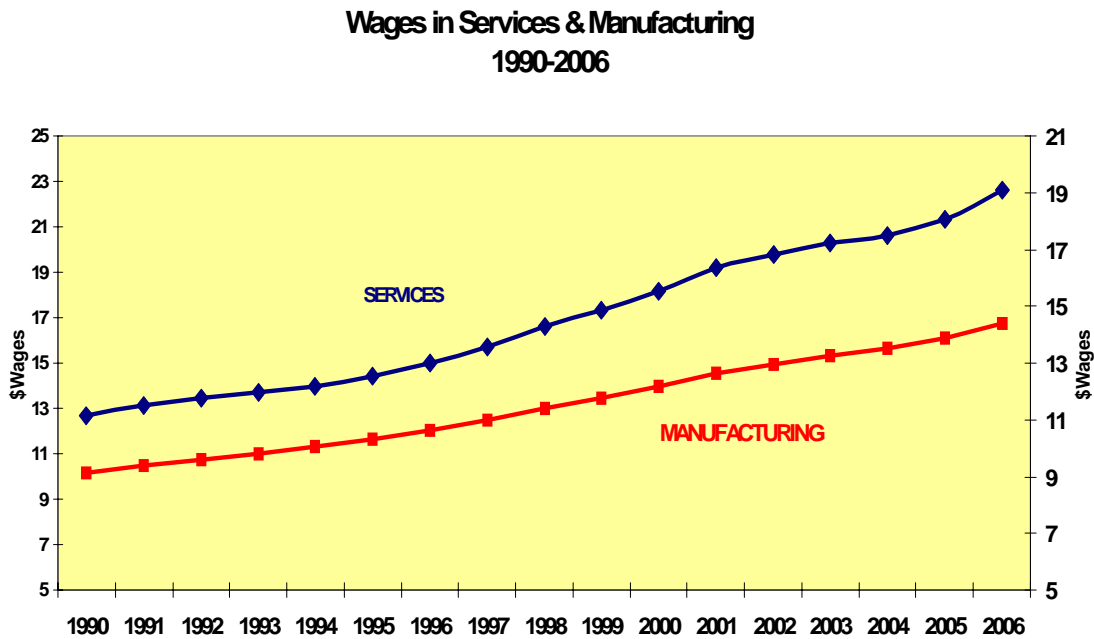
Federal Reserve Index 2000=100



The next chart shows a comparison of the levels of employment in the two sectors. Professional and Business Services employment is now at a higher level than manufacturing employment.



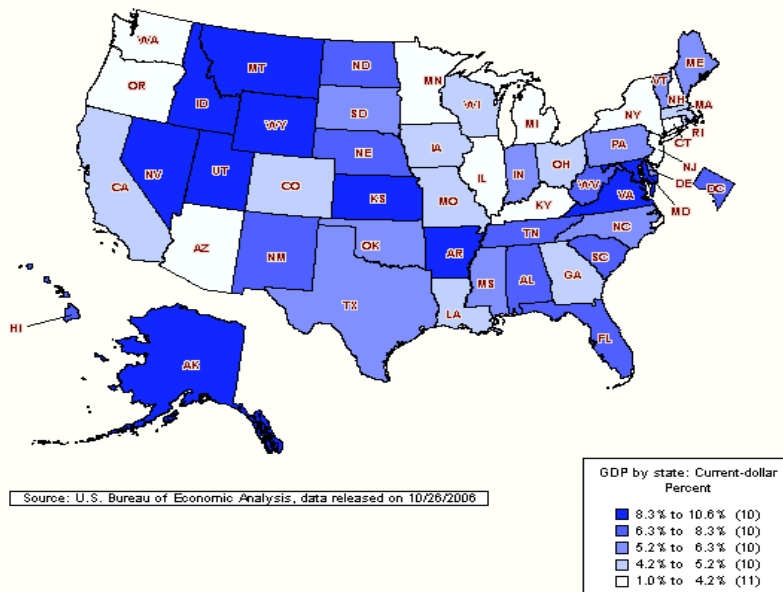
And fortunately, the next chart tells us that wages are higher in the burgeoning business and professional services sector than in manufacturing, and have been for quite some time.



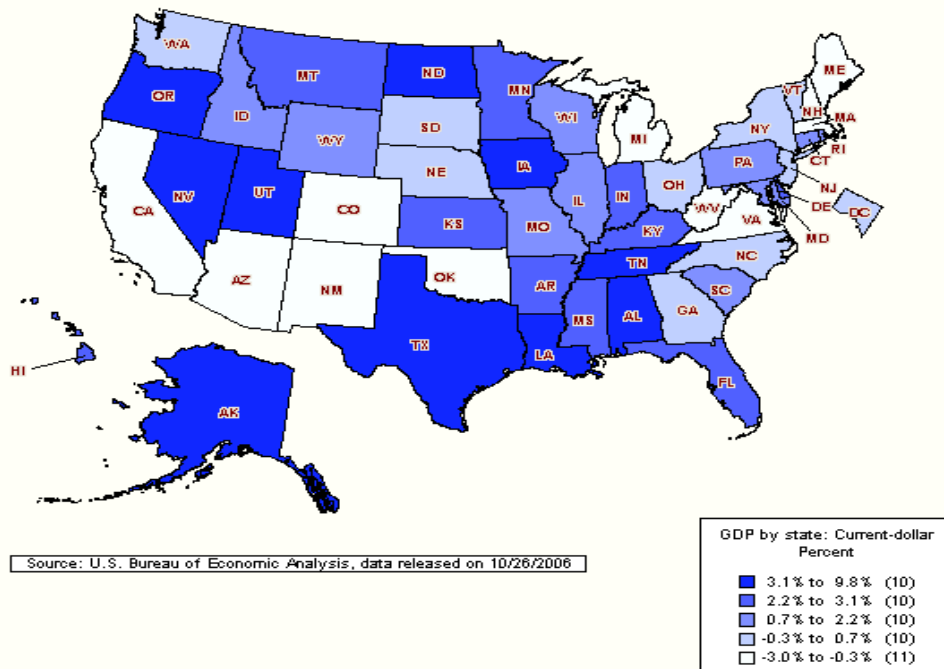
The Geographic imprint of the knowledge and manufacturing economies

Of course, employment is where we earn our daily bread and pay the tax man, but where we choose to live will have a large bearing on whether or not we participate in the growing knowledge economy. The next charts allow us to compare state participation in the knowledge economy and in manufacturing. The first chart shows average growth in nominal state GDP in Professional and Business Services for 2000 to 2005. The darker the color, the larger the growth of the sector that contains the knowledge economy.

Average State GDP Growth in Professional and Business Services: 2000-2005



Average State GDP Growth in Manufacturing: 2000-2005



Notice the high level of knowledge economy growth in the Rocky Mountain and western states. Of course, these are high growth states. The second chart reports nominal growth in state manufacturing GDP. Notice here how manufacturing growth is more greatly dispersed across the map. High manufacturing activity is no longer contained in the specialized north central states. But then, we must remember the manufacturing sectors that are the U.S. strong players. These are Computer and Electronics, Machinery, Aircraft, Mineral Products, and Food. Of these, only Mineral Products tends to be locationally specific.

Knowledge Clusters

Michael Porter's persuasive argument that economic development can be enhanced by building clusters of related industries and firms is now embedded as policy in many state agencies that seek to improve the economic well being of their citizens. After all, the cluster theory is profoundly logical. Firms and organizations that have a symbiotic relationship naturally seek each other's company. Knowledge spillovers among people working in the same industry reduce operating costs. Put differently, efforts to enrich a cluster in a state support what economic forces would do naturally. But in all the discussion of clusters, not much is said about the knowledge economy and how it clusters.

An October 2006 **Atlantic Monthly** article by Richard Florida offers some powerful insight on all this. "Where the Brains Are" describes an amazing change in the geographic distribution of educated Americans, people who have at least a four-year college education. Using county level data, Florida reports a rather even distribution of "brains" for 1970. At the time, 11% of the U.S. population was college educated. With some exceptions like the Southeast, which had a significantly lower level and a more uneven distribution of college-educated people, the educated population was fairly evenly spread. Not so in 2000. With 24% holding college degrees, the brains had moved to the cities. They had clustered. Generally speaking, rural and sparsely populated states and regions experienced a relative brain drain.

But what was the attraction? What was the clustering force? What is the knowledge economy's leading industry?

Urban living. The performing arts. Mentally stimulating activities. Interactions with other creative people. Knowledge spillovers. Lower cost air transportation and communications. These key words describe some of the clustering forces.

But there is one other powerful force to be recognized. What is the mother lode, the key industry in the knowledge economy?

Major research universities are the engines of the knowledge economy. And have been since the Middle Ages.

Norman Borlaug: An American hero

In this month's issue of **Hoover Digest**, Henry Miller tells the story of Norman Borlaug who is called the father of the Green Revolution. Through years of research as a breeder of wheat, Borlaug developed new varieties that vastly expanded the world's food supply.

From 1950 to 1992, the world's grain output rose from 692 million tons produced on 1.70 billion acres of land to 1.90 billion tons on 1.73 billion acres, almost a three-fold increase on the same amount of land. As a result of the new Borlaug wheat, India, formerly an importer, became an exporter of grain. Huge increases in nutrition supply developed in South America, Asia, and Africa.

Miller tells us that Norman Borlaug was born in Iowa during the Great Depression. He attended a one-room school and dreamed of becoming a high school science teacher. He flunked the university entrance exam but persevered, eventually earning graduate degrees in plant pathology. Borlaug's work was done at an institute in Mexico supported jointly by the Mexican government, Ford Foundation and Rockefeller Foundation.

Mr. Ford and Mr. Rockefeller would be proud.

Using creativity born of the prairie, Borlaug found that because of the unusually long growing season he could double the number of experimental crops at his research station in Mexico. The new strain finally emerged from these many experiments. In 1970 Dr. Borlaug received the Nobel Peace prize for his significant contribution to human wellbeing. In February 2006, Norman Borlaug received the National Medal of Science in ceremonies at the White House.

I spent the summer of 1970 attending an economics institute at the University of Chicago. It was there that I heard the end of the Borlaug story. After thousands of experiments, the miracle wheat strain came from the very last row, in the last field, of the last combination of strains being tested. In a way, the outcome was a reflection of a man who always persevered.

Maybe there is lesson here.